Pseudomonas

A genus of Gram-negative, nonsporeforming, rod-shaped bacteria. Motile species possess polar flagella. They are strictly aerobic. Members of the genus *Pseudomonas* cause a variety of infective diseases .*Pseudomonas aeruginosa* is the most significant cause of hospital-acquired infections. The spectrum of clinical disease ranges from urinary tract infections to septicemia, pneumonia, meningitis, and infections of postsurgical and posttraumatic wounds.

Pseudomonas pigments;

1- pyocyanin …. Blue color
2- pyoverdin….green (fluorescent) color
3- Pyorubin ….. reddish brown color
4- Pyomelanin …. Black color

Some strains of pseudomonas however do not produce any ofthese pigments.

Pseudomonas aerogenosa ; a common isolate from wounds, burns and urinary tract infections and from many other accumulations of pus . Also commonly found in otitis. Its presence may be indicated by a distinctive blue or green color of the pus or infected site.

Laboratory diagnosis;

Specimen; urine , pus, blood, CSF, sputum, swab.

Culture;

1- MacConkey…… Pseudomonas appears as a non – lactose fermenter.
2- EMB.....there is no metallic sheen on EMB agar.
3- Nutrient agar.... *Pseudomonas aerogenosa* produces a blue– green pigment and a fruity aroma. Milk agar may be added to nutrient agar to give a white background.

Biochemical tests;

1- **I M Vi C**
- - - +

2- TSI: no change k/k Gas –ve H 2S –ve

3- oxidase + ve

Vibrio cholerae

Is a Gram negative comma-shaped bacterium with a polar flagellum that causes cholera in humans.

*T*here are three main types of *V. cholerae* according to their antigenic structure;

a-classical type

b- El tor

c- ogawa

d- inaba

V. cholerae enters the human body through ingestion of contaminated food or water. The bacterium enters the intestine, imbeds itself in the villi, replicates and releases cholera toxin.

Laboratory diagnosis;

Specimen; Stool, rarely vomit.

Transport media include;

1- sea salt medium , which is highly alkaline due to high Nacl
2- Alkaline peptone water. enrichment broth,

Culture;

1- TCBS; (Thiosulfate citrate bile salt sucrose.) is a selective agar medium

Indicator – bromothymol blue ..Control is green (prepared as plates)

After inoculation with suspected bacteria and a 18 to 24 hours' incubation at 35° to 37°C on TCBS agar ,Colonies suspicious for V. cholerae will appear as yellow, shiny colonies, 2 to 4 mm in diameter. The yellow color is caused by the fermentation of sucrose in the medium. Sucrose-nonfermenting organisms, such as V. parahaemolyticus, produce green to blue-green colonies.

2- S.S agar

3- Alkaline peptone water

4- Sea salt medium.

Biochemical tests; *Vibrio cholerae* appears as a non lactose fermenter

- Motile
- Urease -ve
- Oxidase +ve . development of a dark purple color within 10 seconds.
- TSI ; A/A Gas –ve, H_2S –ve

BACTERIAL spp	I	MR	VP	C	MOTILITY	TSI		UREASE	OXIDASE
